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Empirical Study on Math Anxiety and Self Confidence in Mathematics amongst students

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ABSTRACT: *This study investigates upon the mental framework of Students when they are involved in studying mathematics, their reasons for math Anxiety, the helplessness to envision and comprehend the mathematical theories and notions, the way to encounter it with ingraining Positivity and Confidence. The analytical purview of the factors causing anxiety is discussed and the ways to increase the students' confidence is dealt with. The psychological phenomena of "something is hated because it is not understood properly" are the basis where the students have to understand themselves in order to take control of what causes fear and anxiety in them.*

KEYWORDS: *Math , Anxiety, Self Confidence, Students.*

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I. INTRODUCTION

Nothing can be more painful to a student, diligent in all subjects with a passion for learning who seems it highly challenging when it comes to the part of the subject called mathematics. Excelling in other subjects with a liking to do so much in activities related to all other subjects expect mathematics causes nervousness, dreadful shyness and fear in the minds of the students causing depression and anxiety. This scenario creates anxiety in the minds of the students. Students represent their anxiety in various ways including some behavioural changes seeking stable support and encouragement. So let us discuss in detail about certain factors explaining its cause and effect.

II. METHODOLOGY

The research design of the study is survey method. The data was collected through standardized questionnaires and also from the academic performance of students.The present study is mainly concerned with XI standard students in Chengalpattu district. Six schools from Chengalpattu have been chosen randomly for the study. 300 students were drawn from urban schools. In the whole sample of 300 students, 100 students were drawn from Government schools, 100 students from Aided schools, 100 students' from matriculation schools. As the present study investigates the math anxiety and self confidence of students, the tools taken by the investigator are 1. Hamilton Anxiety Rating Scale (HAM-A) and 2. Jensen Hertzberg Self Confidence Scale. A Pilot study was conducted among 50 students to establish the reliability and validity of the different tools used in the present study. The reliability of the tools were calculated using odd-even method. Both the scales Reliability and Validity were validated . In order to establish the reliability of these scales odd even method was used. The reliability of these scales were found to be 0.66. The index of validity which is the square root of reliability was found to be .81. The questionnaires were highly valid and reliable.

III. DISCUSSION

HYPOTHESES: 1

THERE IS A MODERATE LEVEL OF MATH ANXIETY FOUND AMONG STANDARD STUDENTS.

Table – 1,

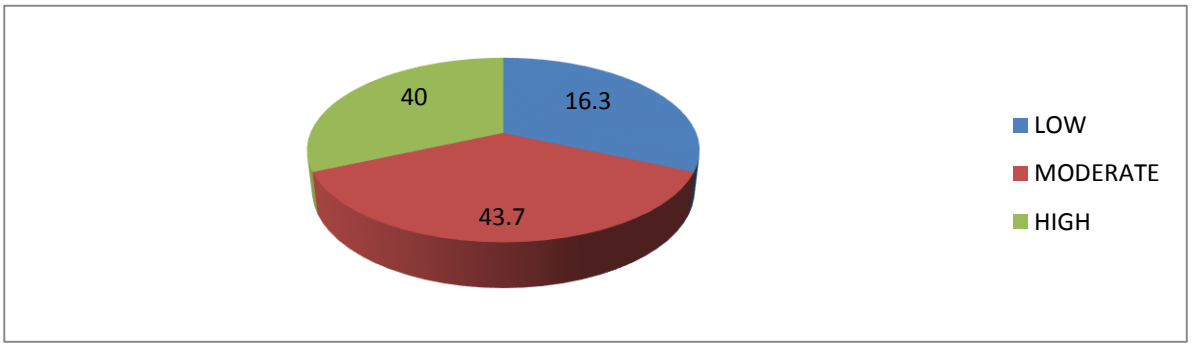
LEVEL OF MATH ANXIETY FOUND AMONG STANDARD STUDENTS

MATH ANXIETY		
Level	**Frequency**	**percentage**
Low	49	16.3
Moderate	131	43.7
High	20	40.0

It is observed from the above table that 43.7% students show a moderate level of Math Anxiety. This indicates that the Math Anxiety of students is moderate in nature. So the hypothesis is accepted.

Figure-1, SHOWING LEVEL OF MATH ANXIETY OF STUDENTS

HYPOTHESES: 2



THERE IS NO SIGNIFICANT DIFFERENCE BETWEEN BOYS AND GIRLS IN THEIR MATH ANXIETY.

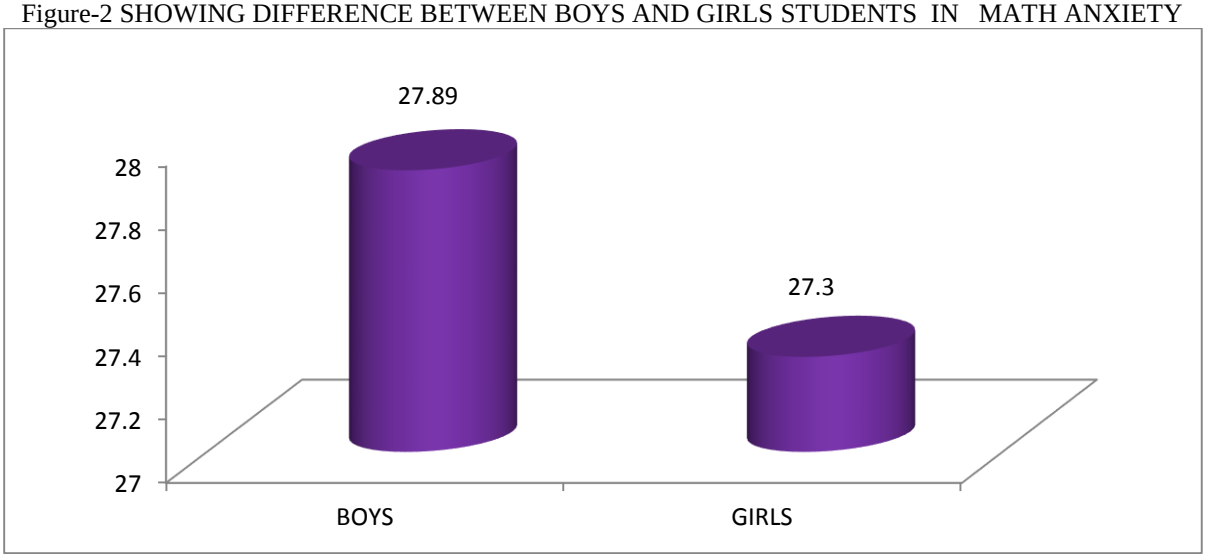
Table-2,

SHOWING MEANS SCORES DIFFERENCE BETWEEN BOYS AND GIRLS STUDENTS IN MATH ANXIETY.

VARIABLE	GENDER	N	M	SD	SEM	't'	REMARKS
MATH ANXIETY	MALE	150	27.89	7.86	0.64	0.650	NS
	FEMALE	150	27.30	7.79	0.64		

From the above table ,'t' the calculated value (0.650) is less than the table value (1.96) Hence there is no significant difference in Math Anxiety between boys and girls students .So the above hypothesis is accepted.

Figure-2 SHOWING DIFFERENCE BETWEEN BOYS AND GIRLS STUDENTS IN MATH ANXIETY



HYPOTHESIS: 3

THERE IS NO SIGNIFICANT DIFFERENCE BETWEEN TAMIL MEDIUM OF INSTRUCTION AND ENGLISH MEDIUM OF INSTRUCTION STUDENTS IN THEIR MATH ANXIETY.

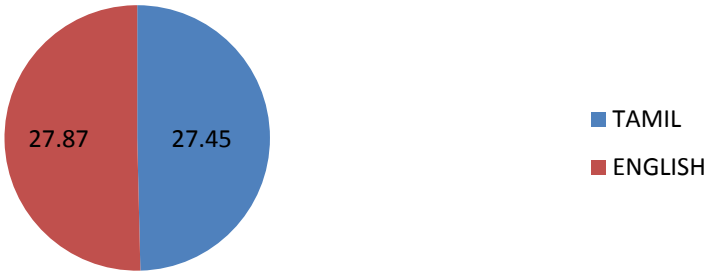
Table-3

SHOWINGS MEAN SCORE DIFFERENCE BETWEEN TAMIL MEDIUM OF INSTRUCTION AND ENGLISH MEDIUM OF INSTRUCTION STUDENTS IN THEIR MATH ANXIETY

VARIABLE	GENDER	N	M	SD	SEM	't'	REMARKS
MATH ANXIETY	TAMIL MEDIUM OF INSTRUCTION	200	27.45	7.85	0.56	0.444	NS
	ENGLISH MEDIUM OF INSTRUCTION	100	27.87	7.78	0.76		

From the above table ,'t' the calculated value (0.444) is less than the table value (1.96) Hence there is no significant difference in Math Anxiety between Tamil medium instruction and English medium instruction , so the above hypothesis is accepted

Figure-3 DIFFERENCE BETWEEN TAMILMEDIUM INSTRUCTION AND ENGLISH MEDIUM INSTRUCTION IN THEIR MATH ANXIETY.



HYPOTHESES: 4

THERE IS A MODERATE LEVEL OF SELF CONFIDENCE FOUND AMONG STUDENTS

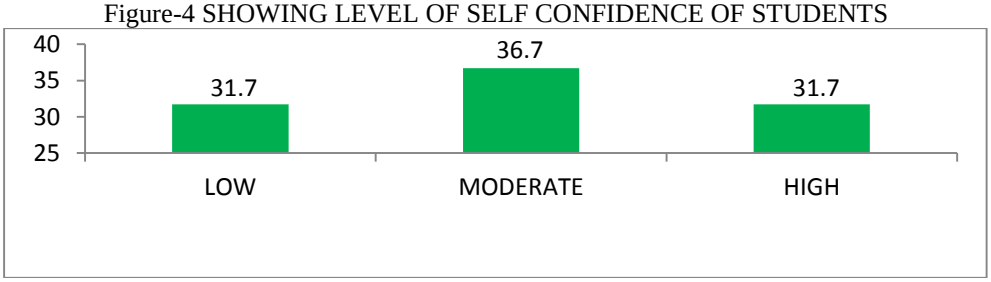
Table-4

LEVEL OF SELF CONFIDENCE OF STUDENTS

SELF CONFIDENCE		
Level	**Frequency**	**Percentage**
Low	95	31.7
Moderate	110	36.7
High	95	31.7

It is observed from the above table that 36.7% students show a moderate self confidence indicating that the self confidence of students is moderate in nature. So the hypothesis is accepted.

Figure-4 SHOWING LEVEL OF SELF CONFIDENCE OF STUDENTS



HYPOTHESES: 5

THERE IS NO SIGNIFICANT DIFFERENCE BETWEEN BOYS AND GIRLS STUDENTS IN THEIR SELF CONFIDENCE.

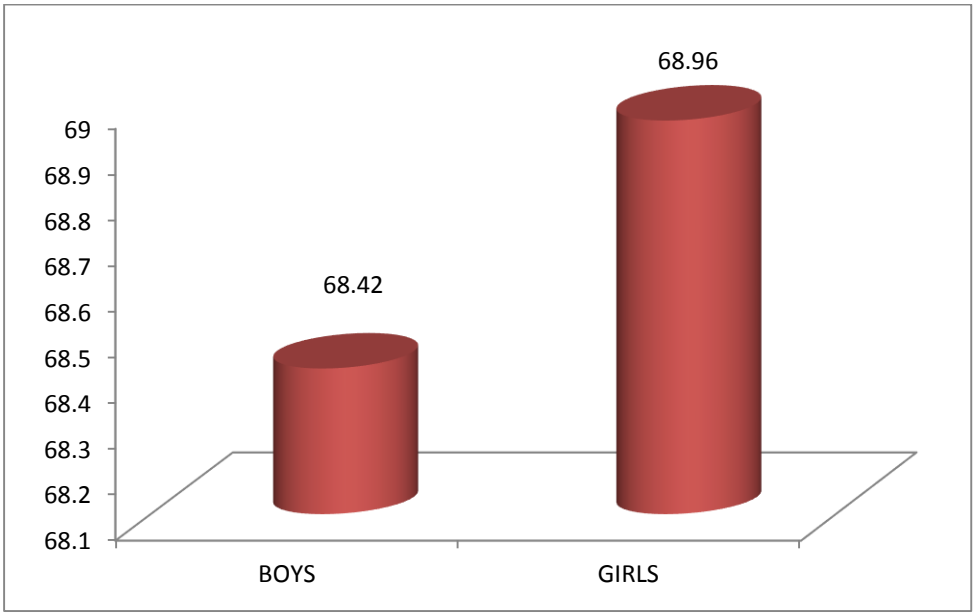
Table-5,

SHOWING MEAN SCORE DIFFERENCE BETWEEN BOYS AND GIRLS STUDENTS IN THEIR SELF CONFIDENCE.

VARIABLE	GENDER	N	M	SD	SEM	't'	REMARKS
SELF CONFIDENCE	MALE	150	68.42	9.73	0.79	0.475	NS
	FEMALE	150	68.96	9.96	0.81		

From the above table,'t' the calculated value (0.475) is less than the table value (1.96) Hence there is no significant in difference between Boys and girls students in their self confidence. So the above hypothesis is accepted.

Figure-5**,** SHOWING MEAN SCORE DIFFERENCE BETWEEN BOYS AND GIRLS STUDENTS IN THEIR SEELF CONFIDENCE.



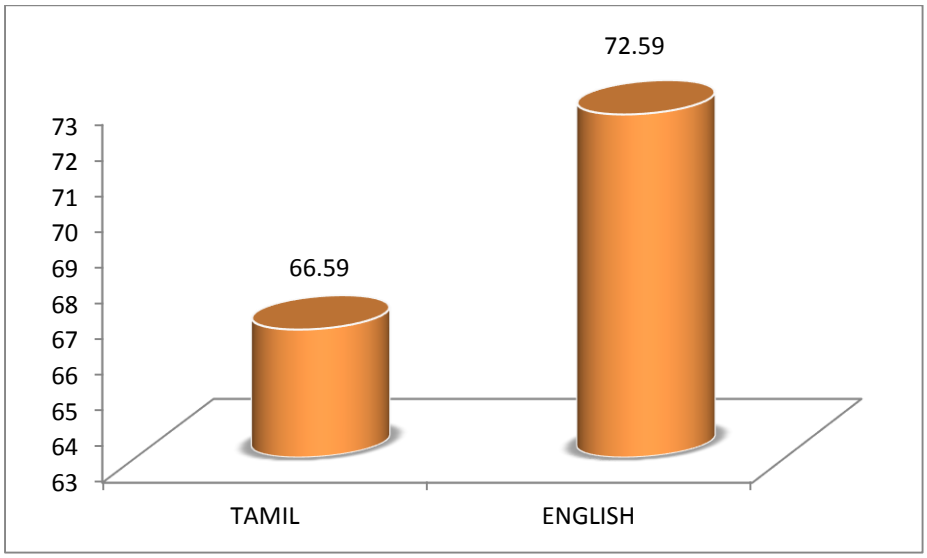
HYPOTHESIS: 6
THERE IS NO SIGNIFICANT DIFFERENCE BETWEEN TAMIL MEDIUM AND ENGLISH MEDIUM STUDENTS IN THEIR SELF CONFIDENCE.

Table-6
SHOWING MEAN SCORE DIFFERENCE BETWEEN TAMIL AND ENGLISH MEDIUM STUDENTS IN THERE SELF CONFIDENCE.

VARIABLE	GENDER	N	M	SD	SEM	't'	REMARKS
SELF CONFIDENCE	TAMIL	195	66.59	8.59	0.62	5.261	0.01
	ENGLISH	105	72.59	10.81	1.05		

From the above table ,'t' the calculated value (5.261) is less than the table value (1.96) Hence there is no significant in difference between the Tamil and English medium students in their self confidence . So the above hypothesis is rejected.

Figure-6 SHOWING MEAN SCORE DIFFERENCE BETWEEN TAMIL AND ENGLISH MEDIUM STUDENTS IN THEIR SELF CONFIDENCE.



HYPOTHESES: 7
THERE IS NO SIGNIFICANT RELATIONSHIP BETWEEN MATH ANXIETY AND SELF CONFIDENCE OF THE STUDENTS.

Tables -7
INTER CORRELATION BETWEEN MATH ANXIETY AND SELF CONFIDENCE OF THE STUDENTS.

Variable	Self confidence	Moral Anxiety
MATH ANXIETY		**0.104**
SELF CONFIDENCE	**0.104**	

Positively correlated significant .There is no significant relationship between math anxiety and self confidence of the students. The data were calculated according to Pearson correlation 2-tailed test. The result of correlation: It is evident that the correlation coefficient is not significant. Therefore the null hypothesis is accepted.

EDUCATIONAL IMPLICATIONS

Math anxiety is a staid learning predicament. Appropriate intrusion can recover and advance student's performance in mathematics and in life. Rote learning methods must be eliminated. Application knowledge of mathematics enhanced with actual understanding of mathematical concepts must be encouraged. Cataloging of students and labeling them according to their performance in mathematics must be immediately seized. Math anxiety is undoubtedly caused only due to both poor teaching and learning experiences. Methods which enable the students who need more time to be devoted for practice in mathematical concepts must be continuously practiced regularly. Psychological boosters must be given for the students to understand that when students do not understand or comprehend mathematical concepts , they feel like they lack control over learning mathematics. When they identify that they lack control, they tend to avoid the subject and feel aversion towards the subject. This strong repugnance creates a strong form of contempt for any activity related to the subject mathematics. Thus when being forced, anxiety emerges out of the student there by diluting the level of performance of the student in that subject harming the level of self confidence.

LIMITATIONS OF THE STUDY

The sample size is restricted to 300 students only, who were selected, randomly. The study was conducted only for Government, Aided , Private schools. Only six schools Chengalpattu district have been taken for the study. Only XI students were considered for this study.

SUGGESTION FOR FURTHER RESEARCH

This study may be extended for the higher secondary students as they are in their adolescence period. Student's attitude towards their education and their math anxiety factors could be studied. Student's level of aspiration and their anxiety could be studied. This study may be extended, including other related variables, like adjustment, anxiety, learning attitude etc in relation to school students.

IV. CONCLUSION

The purpose of the present investigation was to make a study on math anxiety and self confidence. The study is sure to find some usefulness in the field of education and finding of the study can serve as a database for further research. The students identified with the so called anxiety must be continuously encouraged to take part in the math classes regularly. The students must be helped to eliminate the negativity and augmented with positivity. In a simple phrase, teach the most important fact to the student that a cat is only a cat and not the tiger, BUT insist that the cat must be the best cat. There is no harm in being a cat unless it is the best of all cats. There is no need for a cat to be a tiger. So it is entirely in the hands of the teachers to make feel the students comfortable in a mathematics classroom. Realistic utility of Mathematics in day to day life where in the application of the math skills in real world examples will gradually dilute and vanish the anxiety in the minds of students.

BIBLIOGRAPHY

[1]. Tobias, S., & Weissbrod, C. (1980). Anxiety and mathematics: An update. Harvard Educational Review, 50(1), 63–70.
[2]. Rydell, R. J., McConnell, A. R., & Beilock, S. L. (2009). Multiple social identities and stereotype threat: Imbalance, accessibility, and working memory. Journal of Personality and Social Psychology, 96(5), 949–966.
[3]. Christina B. Young, Sarah S. Wu, and Vinod Menon (March 20, 2012) The Neurodevelopmental Basis of Math Anxiety Volume 23, Issue 5
[4]. Ashcraft M. H., Krause J. (2007). Working memory, math performance, and math anxiety. Psychonomic Bulletin & Review, 14, 243–248.

[5]. Ashcraft M. H., Ridley K. S. (2005). Math anxiety and its cognitive consequences. In Campbell J. I. D. (Ed.), Handbook of mathematical cognition (pp. 315–327). New York, NY: Psychology Press.
[6]. Ma X. (1999). Meta-analysis of the relationship between anxiety toward mathematics and achievement in mathematics. Journal for Research in Mathematics Education, 30, 520–540.